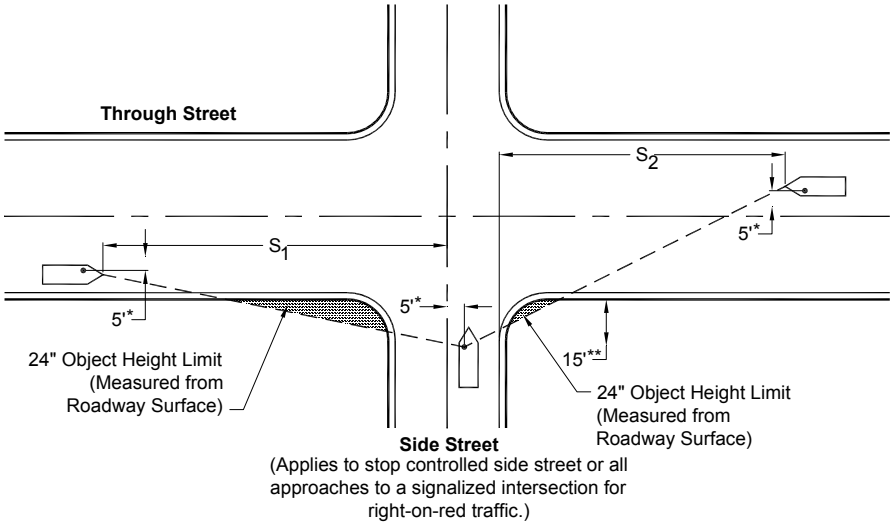
grade of the through roadway is steep, flattening through the intersection is desirable as a safety measure.

The maximum profile grade through an intersection is six percent for arterials and collector streets and eight percent for local streets. The intersecting streets' profiles and cross slopes need to be coordinated with one another to ensure a safe and comfortable driving surface. Typically this may mean extending grades through the intersection for approximately 75 feet to 150 feet. Short vertical curves may be necessary in lieu of grade breaks.

D. Intersection Sight Distance

In order to provide the opportunity for vehicles at an intersection to safely cross or make left or right turns onto a through street, adequate sight distance must be provided. The sight distance requirements outlined below are required for all private and public street intersections and at all intersections of driveways onto public or private streets. Internal driveway intersections on private property are excluded from these requirements.

Sight lines are to be drawn on roadway and landscaping plans to represent the areas that must be free of all objects and topography in excess of 24 inches above the roadway surface. Figure 5.3-26 depicts the technique used to determine the driver's eye location and an approaching vehicle; a line is then drawn to connect these two points. Continuous unobstructed line of sight must be provided along this line and throughout the approach to the intersection, providing an unobstructed sight triangle to the side street driver. Vegetation placed within the sight triangle will be of a low variety that remains below 24 inches when mature. Trees can be considered within the triangle as long as the canopies are above 7 feet, they are a single trunk variety, and they are not spaced in a configuration that creates a "picket fence" effect.



* 5 ft. measured to nearest lane line or centerline.
**15 ft. measured from face of curb or edge of travelway.

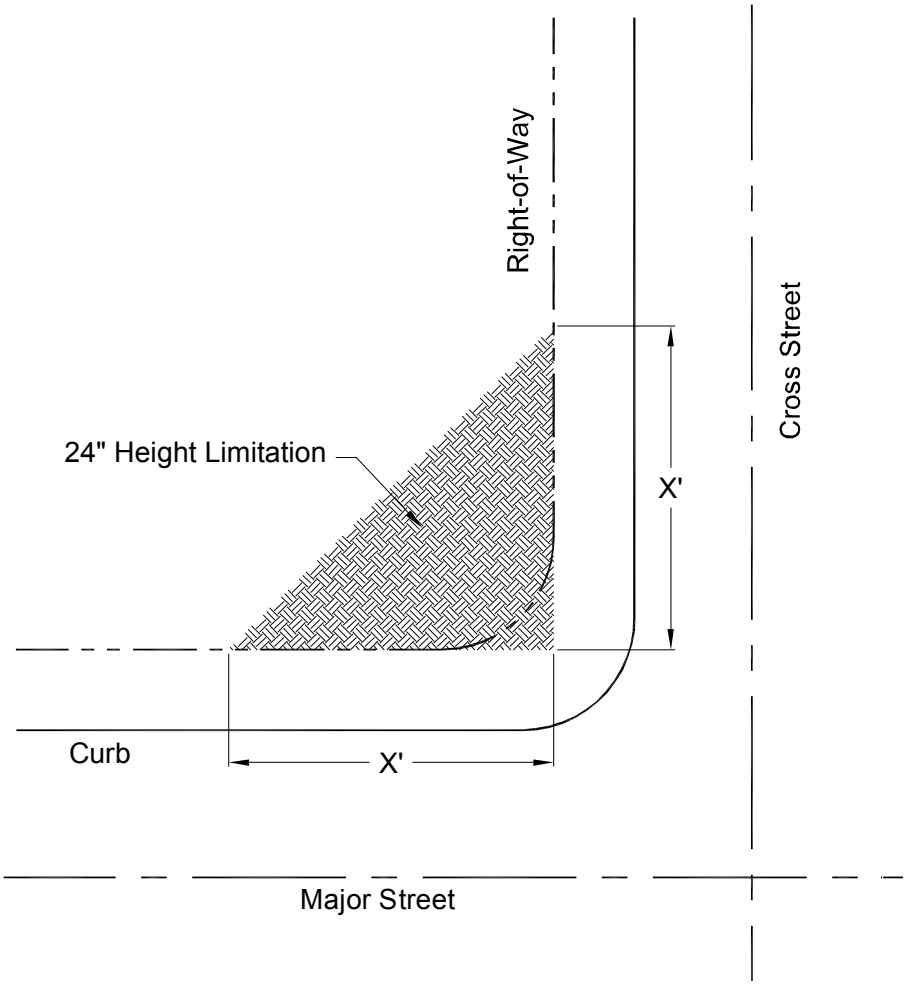
S_1 = Intersection sight distance in ft. on drivers left for right turns, left turns and through traffic.

S_2 = Intersection sight distance in ft. on drivers right for left turns or straight through traffic.

(See Appendices 5-3A and 5-3B for distances S_1 and S_2.)

FIGURE 5.3-26. INTERSECTION SIGHT DISTANCE REQUIREMENTS

opposing through volume exceeds 1,000 vehicles per hour, or the delay to left turning vehicles exceeds 45 seconds. Sight distance must be considered and calculated for these movements based on the AASHTO Policy on Geometric Design in order to determine the allowance of permitted left turns.



Major Street Classification	**X** (in feet)
Parkway, Expressway, Arterials, Major Collector	25
Minor Collector,	35
* Local Streets	35 / 60 / 70

* If the standard right-of-way (46 ft local residential, 60 ft local collector) is not available, the safety triangle (X) shall measure 60 ft on local residential streets and 70 ft on local collector streets from the center lines of the streets.

FIGURE 5.3-27. TRAFFIC SAFETY TRIANGLE ON CORNER PROPERTY

Design Specifications for Standard Suburban Streets

Street Design Element*	Major Arterial	Minor Arterial	Major Collector	Minor Collector	Local Collector	Local Residential	Local Commercial / Industrial
Full right-of-way width †	150	110	100	70	60	46	60
Pavement width †‡	108	80	72	40	36	28	40
Median width - Curbed, Painted †	24C‡	16C‡ 12C Urban	12P	12P	12P	None	None
Type of Curb - Vertical, Rolled †	V	V	V	V	R	R	V
Design speed (mph)	55	55	45	35	30	20	20
Length of transition for 2% superelevation	320	210	210	135	150	150	150
Min radius of horizontal curve without superelevation	1800	1800	1100	650	450	200	200
Min radius of horizontal curve with 2% superelevation	1350	1350	850	500	350	150	150
Min length of tangent btwn reverse curves	300	300	250	200	150	100	100
Min length of tangent btwn curves in same direction	660	660	500	400	300	250	250
Max horizontal curve length	500	500	500	400	250	100	100
Stopping sight distance	500	500	365	225	200	125	125
Passing sight distance	1950	1950	1650	1300	1100	800	800
S_1 Intersection sight distance on drivers left for right turns, left turns and through traffic	650	610	500	325	300	190	355
S_2 Intersection sight distance on drivers right for left turns or straight through traffic	860	780	620	415	355	220	395
Min tangent length approaching intersection	300	300	250	200	150	100	100

* Unit of measure in ft unless otherwise noted.
† These first four design elements may vary for modified cross sections, such as the Urban Character streets, with approval from the Transportation Department.
‡ Measured from back of curb to back of curb.

Design Specifications for Standard Rural / ESL Streets

Street Design Element*	Major Arterial	Minor Arterial	Major Collector	Minor Collector	Local Collector	Local Residential
Full right-of-way width †	150	110	90	70	50	40
Pavement width †‡	108	80	70	48	28	23-24
Median width - Curbed, Painted †	24C‡	16C‡	8C‡	8C‡	None	None
Type of Curb - Mountable, Rolled or Ribbon †	M, Ro or Ri	M, Ro, or Ri	M or Ro	Ro	Ro or RI	Ro or Ri
Design speed (mph)	55	55	45	35	30	20
Length of transition for 2% superelevation	320	210	210	135	150	150
Min radius of horizontal curve without superelevation	1800	1800	980	475	250	100
Min radius of horizontal curve with 2% superelevation	1350	1350	760	385	255	85
Min length of tangent btwn reverse curves	300	300	250	200	150	None
Min length of tangent btwn curves in same direction	660	660	500	400	300	250
Max horizontal curve length	500	500	500	400	250	100
Stopping sight distance	500	500	365	225	200	125
Passing sight distance	1950	1950	1650	1300	1100	800
S_1 Intersection sight distance on drivers left for right turns, left turns and through traffic	650	610	500	325	300	190
S_2 Intersection sight distance on drivers right for left turns or straight through traffic	860	780	620	415	355	220
Min tangent length approaching intersection	300	300	250	200	150	100

* Unit of measure in feet unless otherwise noted.

† These first four design elements may vary for modified cross sections, such as those that include trails within the right-of-way, with approval from the Transportation Department.

‡ Measured from back of curb to back of curb.